

ABSTRACT

The present invention provides means for forming an oxide film on a metal surface, means for repairing a defect of an oxide film, a high-performance electrolytic capacitor using the means, and an electrolyte of the capacitor. Namely, the present invention provides a method for easily forming an oxide film on the surface of a metal or an alloy thereof by anodization using a solution containing an ionic liquid. In an application of this method, an electrolytic capacitor having means for repairing a defect of an oxide film can be formed by a method using, as an electrolyte, an ionic liquid, a solution containing an ionic liquid and a salt, or a solution containing an ionic liquid and a conductive polymer or a TCNQ salt, and a valve metal or an alloy thereof as a metal.